

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Amended) A method for quantification of strain imaging comprising ~~the steps of:~~

(a) performing a motion analysis on at least two selected regions of interest (ROI)

before and after tissue compression;

(b) providing a strain estimate for each of ~~the~~ said at least two ROIs based upon said motion analysis; and

(c) comparing ~~the~~ said strain estimates of each of ~~the~~ said at least two ROIs to quantify ~~the strain for the~~ at least two ROIs.

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2. (Amended) The method of claim 1 wherein ~~the~~ said performing ~~step (a)~~ comprises ~~the steps of:~~

(a1) generating a plurality of blocks for each of ~~the~~ said at least two ROIs; and

(a2)* utilizing a block matching technique to perform a motion analysis on each of ~~the~~ said at least two ROIs.

3. (Amended) The method of claim 2 wherein each of ~~the~~ said plurality of blocks touch a boundary of ~~the~~ said at least two ROIs.

4. (Amended) The method of claim 1 wherein ~~the~~ said providing step ~~(206) (b)~~ is performed in accordance with ~~the~~ equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is ~~the~~ strain estimate; and where a_i and b_i are the displacement components for two blocks, which cross over ~~the~~ a boundary of a specific ROI, in ~~the~~ a direction of i -th A-line, d_i is a distance between ~~the~~ said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering ~~the~~ said ROI.

a 5. (Amended) A method for quantification of strain imaging comprising ~~the steps of~~:

(a) performing ~~(206)~~ a motion analysis on a plurality of selected regions of interest (ROIs) ~~(302 and 304)~~; ~~the~~ said performing step (a) further comprising ~~comprises the steps of~~:

(a1) generating a plurality of blocks ~~(150)~~ for each of ~~the~~ at least two ROIs ~~(302 and 304)~~; and (a2) utilizing a block matching technique to perform a motion analysis on each of ~~the~~ said plurality of ROIs ~~(302 and 304)~~, wherein each of ~~the~~ said plurality of blocks ~~(150)~~ touch a boundary of ~~the~~ said at least two ROIs ~~(302 and 304)~~;

(b) providing a strain estimate for each of ~~the~~ said plurality of ROIs ~~(302 and 304)~~ based upon said motion analysis; and

(c) comparing ~~(208)~~ ~~the~~ said strain estimates of each of ~~the~~ said plurality of ROIs to quantify ~~the~~ said strain for ~~the~~ said at least two ROIs ~~(302 and 304)~~.

6. (Amended) The method of claim 5 where ~~the~~ said strain estimate is performed in accordance with ~~the~~ equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is ~~the~~ strain estimate; and where a_i and b_i are ~~the~~ displacement components for two blocks, which cross over ~~the~~ a boundary of a specific ROI, in ~~the~~ a direction of i -th A-line; d_i is a distance between ~~the~~ said two blocks, and i_1 and i_2 are indices along ~~the~~ an A-line on a B-mode image covering that specific ROI.

7. (Amended) A computer readable medium for quantification of strain imaging including program instructions for:

(a) performing (204) a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;

(b) providing (206) a strain estimate for each of ~~the~~ said at least two ROIs based upon said motion analysis; and

(c) comparing (208) ~~the~~ strain estimates of each of ~~the~~ said at least two ROIs to quantify the strain for ~~the~~ said at least two ROIs.

8. (Amended) The computer readable medium of claim 7 wherein ~~the~~ said performing said motion analysis (206) ~~step (a) comprises the steps of:~~

(a1) generating a plurality of blocks (150) for each of ~~the~~ said at least two ROIs (302 and 304); and

(a2) utilizing a block matching technique to perform a motion analysis on each of ~~the~~ said at least two ROIs (~~302 and 304~~).

9. (Amended) The computer readable medium of claim 7 wherein each of ~~the~~ said plurality of blocks touch a boundary of ~~the~~ said at least two ROIs (~~302 and 304~~).

10. (Amended) The computer readable medium of claim 7 wherein said ~~the~~ providing said strain estimate step (~~206~~) (b) is performed in accordance with ~~the~~ equation:

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$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is ~~the~~ strain estimate; and where a_i and b_i are ~~the~~ displacement components for two blocks, which cross over ~~the~~ a boundary of a specific ROI, in ~~the~~ a direction of i-th A-line, d_i is a distance between ~~the~~ said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI.

11. (Amended) A computer readable medium for quantification of strain imaging having program instructions for:

(a) performing (~~206~~) a motion analysis on a plurality of selected regions of interest (ROIs) (~~302 and 304~~); ~~the~~ said performing step (a) further comprising ~~comprises the steps~~ of: (a1) generating a plurality of blocks (~~150~~) for each of ~~the~~ said plurality of ROIs (~~302 and 304~~);

(a2) utilizing a block matching technique to perform a motion analysis on each of ~~the~~ said plurality of ROIs (~~302 and 304~~), wherein each of ~~the~~ said plurality of blocks touch a boundary of ~~the~~ said plurality of ROIs (~~302 and 304~~);

(b) providing (~~206~~) a strain estimate for each of ~~the~~ said plurality of ROIs (~~302 and 304~~) based upon said motion analysis; and

(c) comparing (~~208~~) ~~the~~ strain estimates of each of ~~the~~ said plurality of ROIs to quantify ~~the~~ said strain for ~~the~~ at least two ROIs (~~302 and 304~~).

a) 12. (Amended) The computer readable medium of claim 11 ~~where~~ wherein the strain estimate is performed in accordance with ~~the~~ equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is ~~the~~ strain estimate; and where a_i and b_i are the displacement components for two blocks, which cross over ~~the~~ a boundary of a specific ROI, in ~~the~~ a direction of i-th A-line. d_i is a distance between ~~the~~ said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI.

13. (New) A method for quantification of strain imaging comprising:

(a) performing a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;

(b) providing a strain estimate for each of ~~said~~ at least two ROIs ~~said~~ strain estimate being performed in accordance with equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a distance between said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering the ROI.

14. (New) A method for quantification of strain imaging comprising:

(a) performing a motion analysis on a plurality of selected regions of interest (ROIs); said performing further comprising: (a1) generating a plurality of blocks for each of at least two ROIs; and (a2) utilizing a block matching technique to perform a motion analysis on each of said plurality of ROIs, wherein each of said plurality of blocks touch a boundary of said at least two ROIs;

(b) providing a strain estimate for each of said plurality of ROIs, said strain estimate performed in accordance with equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a

distance between two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI; and

(c) comparing strain estimates of each of said plurality of ROIs to quantify the strain for said at least two ROIs.

15. (New) A computer readable medium for quantification of strain imaging including program instructions to perform a method comprising:

(a) performing a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;

(b) providing a strain estimate for each of said at least two ROIs, said strain estimate performed in accordance with equation:

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$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a distance between said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI; and

(c) comparing strain estimates of each of said at least two ROIs to quantify the strain for at least two ROIs.

16. (New) A computer readable medium for quantification of strain imaging having program instructions for:

(a) performing a motion analysis on a plurality of selected regions of interest (ROIs);
said performing further comprising: (a1) generating a plurality of blocks for each of said plurality of ROIs;

(a2) utilizing a block matching technique to perform a motion analysis on each of said plurality of ROIs, wherein each of said plurality of blocks touch a boundary of said plurality of ROIs;

(b) providing a strain estimate for each of said plurality of ROIs, said strain estimate performed in accordance with equation:

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$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a distance between said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI; and

(c) comparing strain estimates of each of said plurality of ROIs to quantify strain for at least two ROIs.
